

## REMARKS

### I. Information Disclosure Statements

Page 2 of the Office Action states that listing of references in the specification is not a proper information disclosure statement. Then it continues, stating that unless the references are cited on PTO-892, i.e. unless they are listed among the references cited by the Examiner, they were not considered.

However two information disclosure statements (PTO-820) with copies of the cited references were filed in the above-identified U.S. Patent Application. Furthermore initialed copies of both these information disclosure statements were returned with the Office Action indicating that the references were considered!

Also the two information disclosure statements listed all the prior art references described in the specification and the copies that were returned indicated that all these prior art references were considered. Thus it is expected that all the references that are described in the specification will be listed as considered references in any patent that issues in the above-identified U.S. Patent Application.

A clarification of the status of the references cited in the specification is respectfully requested in response to this amendment.

## **II. Objection to the Drawing**

The drawing was objected to under 37 C.F.R. 1.83 (a) for failing to show each and every feature of the claimed invention.

Sketches of two new proposed figures are being filed together with this Office Action to correct this deficiency.

The new proposed figure 4 shows an embodiment in which there are connecting means including the bellows 11 at each end of the absorber pipe 1 for movable connection of the glass sleeve tube 2 and the metal pipe 3. This figure is necessary to support the embodiment claimed in new claims 32 to 38, which was also claimed in canceled claim 14. No new matter has been entered in the figure 4 or the new claims 32 to 38.

The new proposed figure 5 shows one embodiment of the "parabolic collector" claimed in claim 17 in perspective. The parabolic collector is claimed in claims 17 to 31. The proposed new figure 5 is based on the wording of the originally filed claim 17 and does not include any "new matter".

For the foregoing reasons and because of the proposed new figures 4 and 5, withdrawal of the objection to the drawings under 37 C.F.R. 1.83 (a) is respectfully requested.

## **III. Claim Objection**

Claim 8 was objected to because of an antecedent basis error. Claim 8 has been corrected as suggested on page 3 of the Office Action.

Withdrawal of the objection to claim 8 is respectfully requested in view of the change in claim 8.

#### **IV. Indefiniteness Rejection**

Claim 14 was rejected under 35 U.S.C. 112, second paragraph, for indefiniteness.

Claim 14 has been canceled, obviating its rejection for indefinite wording.

Claim 14 was drafted to claim embodiments with connecting means between the sleeve tube 2 and metal pipe 3 at both ends of the absorber pipe, namely the at least one expansion compensating device. However it seemed to be somewhat difficult to formulate an appropriate dependent claim to replace claim 14 because only a single glass-metal transitional element 5 is recited in claim 1. Thus a new set of claims, namely claims 32 to 38, were filed to claim this embodiment and a new figure 4 is proposed to illustrate it.

New independent claim 32 claims an absorber pipe 1 with this sort of connecting means at both ends and with the same connecting structure at both ends of the absorber pipe 1.

New independent claim 32 includes the features and limitations of claim 1 and canceled claim 14. New claims 33 to 38 are dependent claims including features from the previously filed dependent absorber pipe claims 2 to 8.

It is respectfully submitted that new claims 32 to 38 are not indefinite under 35 U.S.C. 112, second paragraph, and are fully supported by the disclosures in the originally filed application, in the specification and claims.

### V. Anticipation Rejection

Claims 1, 2, 8 to 12, 14 and 15 were rejected under 35 U.S.C. 102 (b) as anticipated by JP57-95544.

Claim 1 has been amended by changes in the last paragraph to further distinguish its subject matter from that of the JP reference. The additional distinguishing wording in claim 1 is as follows:

"wherein said at least one expansion compensating device (10) is arranged under the glass-to-metal transitional element (5) and at least partially within ~~in~~ said annular space (4) and between said central metal pipe (3) and said glass-metal transitional element (5)".

Basis for these changes in claim 1 is found on page 7, lines 1 to 6, of applicants' originally filed specification.

Furthermore applicants' claim 1 defines the annular space 4 as the space between the central metal pipe 3 and the glass sleeve tube 2, *not* the space between the central metal pipe 3 and the glass-metal transitional element 5. See lines 3 to 4 of applicants' claim 1 where it states that "an annular space is formed between the central metal pipe 3 and the glass sleeve tube 2". Also an additional "and" has been inserted in the last paragraph to avoid misinterpretation.

Careful study of fig. 4 of the JP reference, which is shown on page 5 of the Office Action, shows that **no part** of the compensation device of the JP reference (pipe 6 comprising bellows 8) extends into the annular space as defined by the applicants in their claim 1. The compensation device of the JP reference extends (at most) up to the annular space between the sleeve tube and central pipe as shown in the figure 4, but not into it. The compensation device does extend into

another annular space between the connecting element 2a (equivalent to the applicants' glass-metal transitional element 3) and central pipe 5 of the JP reference, but the connecting element 2a of the JP reference extends axially from the sleeve tube shown in fig. 4 of the JP reference. This other annular space is adjacent the annular space 4 as defined in applicants' claim 1, but is not part of it.

Furthermore the English language abstract of the JP reference does not disclose any annular space. Reference number 4 of fig. 4 refers to a connection glass 4, not any space.

In addition, as to claim 2, which was also rejected as anticipated, the bellows 8 does not even extend into the other annular space between the connecting element or end cap 2a and the central pipe. In fact, according to the last several lines of the JP abstract the folding bellows 8 is part of or in expandable pipe 6, as shown in Fig. 4 of the JP reference. The bellows 8 is the undulating line portion of the wall of the expandable pipe 6 and is thus clearly well outside of any annular space between the central pipe 5 and the sleeve tube or glass pipe of the JP reference.

The JP reference actually shows the prior art structure described in applicants' background section on page 4, first paragraph, and mentioned on page 7, first paragraph, of the applicants' specification, in which the connecting element or glass-metal transitional element and folding bellows 8 are arranged linearly next to each other. The folding bellows 8 in fig. 4 of the JP reference is actually spaced from the annular space by a short section of the pipe 6.

It is well established that each and every limitation of a claimed invention must be disclosed in a single prior art reference in order to be able to reject the claimed invention under 35 U.S.C. 102 (b) based on the disclosures in the single prior art reference. See M.P.E.P. 2131 and also the opinion in *In re Bond*, 15 U.S.P.Q. 2nd 1566 (Fed. Cir. 1990).

As to amended claim 1, the JP reference does not show a structure in which the expansion compensating device (pipe 6 including bellows 8) extends into the annular space as defined by applicants' claim 1 (see amended last paragraph of applicants' claim 1).

As far as claim 2 goes, the JP reference does not show a structure in which the bellows 8 is under the glass-metal transitional element or connecting element 2a of the reference.

These differences are important to provide the benefits of the claimed invention as explained on page 7 of applicants' specification. When the compensation device is inside the absorber pipe 1, the structure is considerably shortened and the efficiency is improved. Also the glass-metal transition element can be protected from radiation that can cause breakage.

For the foregoing reasons and because of the changes in amended claim 1, withdrawal of the rejection of amended claims 1, 2, 8 to 12, 14 and 15 under 35 U.S.C. 102 (b) as anticipated by JP57-95544 is respectfully requested.

### VI. Obviousness Rejection

Claims 1 to 27 were rejected as obvious under 35 U.S.C. 103 (a) over JP57-95544 in view of Hayama, et al (U.S. Patent 4,133,298).

The features of the JP reference have been described above.

Hayama, et al, discloses an absorber pipe structure similar to that shown in U.S. 4,231,353, in that the structure for the absorber pipe of Hayama, et al, does not include a glass-metal transitional element, but instead the end plate or connecting element is glued onto the glass sleeve tube. U.S. 4,231,353 is discussed on page 5, last paragraph, of applicants' specification.

The features of amended claim 1 are not suggested by the combination of the JP reference with Hayama, et al.

Hayama, et al, does show a structure in which expandable element 15 (like applicants' bellows) is located in the annular space between the central metal pipe and the sleeve tube in fig. 12 of Hayama, et al (column 5, lines 22 to 24). However the expandable element 15 of the reference is spaced from the end of the sleeve tube as shown in fig. 12 by the guide pipe 14, which functions like the glass-metal transitional element 5 of applicants' figs. 1 to 3. The guide pipe 14 is "welded" (must mean fused?) to the end faces of glass outer pipe 11. Also the expandable member is attached to the guide pipe 14 with "wax"?. See the disclosure at column 4, line 67, to column 5, line 10, which apparently is an English translation from the Japanese.

In contrast the expansion compensating device 10 of applicants' claim 1 is

not spaced from the end of the sleeve tube by a guide pipe, but instead is under the equivalent element, the glass-metal transitional element according to claim 1. In the reference the guide pipe and the compensating device are side-by-side axially. For that reason the Hayama, et al, reference still does not disclose the structural relationships as claimed in the last paragraph of the amended claim 1.

The spacing of the expandable member 15 of the reference from the end of the tube 11 is disadvantageous in comparison to applicants' structure, which does not take up as much space for a compensating device of the same size and expandable member 15.

Furthermore the connection of the expandable member 15 and the tube 11 with wax means that it is not possible in the case of the reference to provide a vacuum between the bellows to prevent heat losses.

Thus the expansion compensating device 10 is not equivalent to the structure disclosed in the reference with the expandable member 15 and the guide pipe 14, because the applicants' compensating device 10 performs additional functions and has additional advantages that are not present in the prior art structure.

It is well established that there must be a hint or suggestion of the modifications of the disclosures of the prior art references used to reject a claimed invention under 35 U.S.C. 103 (a) for a valid 103 rejection. For example, the Federal Circuit Court of Appeals has said:

"The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification....It is impermissible to



use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art so that the claimed invention is rendered obvious. This court has previously stated that "one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." *In re Fritch*, 23 U.S.P.Q. 2nd 1780, 1783-84 (Fed. Cir. 1992).

In the case of the instant invention claimed in applicants' claim 1 it is respectfully submitted that one skilled in the solar energy collecting arts would not find a hint or suggestion in the art in Hayama, et al, to modify the structure shown in fig. 3 of the JP reference by including the necessary features from Hayama, et al, to obtain the invention as claimed in applicants' claim 1.

Furthermore as to applicants' dependent claims 3 to 5 and 8 to 10, the prior art references do not disclose or suggest a connecting element 15 or 15', which extends over the bellows and connects one end of the folding bellows to the sleeve tube or the central metal pipe.

This connecting element is advantageously provided with a mirror surface facing the metal pipe in accordance with claims 7 and 13 so that at least in some embodiments the output can be increased and the glass-metal transition element can be protected.

It is well established by many U. S. Court decisions that to reject a claimed invention under 35 U.S.C. 103 there must be some hint or suggestion in the prior art of the modifications of the disclosure in a prior art reference or references used to reject the claimed invention, which are necessary to arrive at the claimed invention. For example, the Court of Appeals for the Federal Circuit has said:

"Rather, to establish obviousness based on a combination of elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant...Even when obviousness is based on as single reference there must be a showing of a suggestion of motivation to modify the teachings of that reference.." *In re Kotzab*, 55 U.S.P.Q. 2<sup>nd</sup> 1313 (Fed. Cir. 2000). See also M.P.E.P. 2141


It is respectfully submitted that neither JP57-95544 nor Hayama, et al, disclose or suggest the subject matter of the preferred embodiments of the invention with the connecting element 15 or 15' as claimed in applicants' dependent claims 3 to 7 and 8 to 10.

For the foregoing reasons and because of the changes in the amended claims withdrawal of the rejection of claims 1 to 27 under 35 U.S.C. 103 (a) over JP57-95544 in view of Hayama, et al (U.S. Patent 4,133,298) is respectfully requested.

Should the Examiner require or consider it advisable that the specification, claims and/or drawing be further amended or corrected in formal respects to put this case in condition for final allowance, then it is requested that such amendments or corrections be carried out by Examiner's Amendment and the case passed to issue. Alternatively, should the Examiner feel that a personal discussion might be helpful in advancing the case to allowance, he or she is invited to telephone the undersigned at 1-631-549 4700.

In view of the foregoing, favorable allowance is respectfully solicited.

Respectfully submitted,



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